

REMARKS

Claims 1-7 are all the claims pending in the application. No claims are amended herein.

In accordance with 37 C.F.R. § 1.174, the specification is amended to refer to the reference numerals in Figs 1a and 1b of the proposed drawing submitted in response to the Examiner's requirement for a drawing. Support for the amendments to the specification are found, for example, on page 1, line 18 through page 2, line 9 and page 4, line 20 through page 5, line 2. The specification is also amended to correct minor grammatical and typographical errors. Hence no new matter is introduced.

Accordingly, entry of the amendments to the specification is respectfully requested.

I. Response to Requirement for Drawing

On page 2, paragraph 2 of the Office Action, the Examiner requires Applicants to furnish a drawing under 37 C.F.R. § 1.81 to facilitate understanding of the invention.

Applicants submit herewith a proposed drawing with Figures 1a and 1b showing the construction of a PDP of the claimed invention comprising a front faceplate 1, a rear faceplate 2, electrodes 3, a dielectric layer 4, a protective film 5, fluorescent material layer 6, discharge space 7 and barrier ribs 8, as described in the original specification on page 4, line 20 through page 5, line 6. Hence no new matter is introduced.

Further, the specification is amended herein to include a "Brief Description of the Drawings" and to include references to the drawing figures.

Accordingly, Applicants respectfully request acknowledgment and approval of Figures 1a and 1b.

II. Response to Claim Rejections under 35 U.S.C. § 102

A. Murata et al

Claims 1 and 7 are rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by Murata et al (US '099).

Applicants respectfully traverse the rejection and submit that Murata et al does not disclose all elements of the claimed invention.

The present invention as recited in Claim 1 provides a vacuum ultraviolet radiation excited light-emitting device comprising a discharge space filled with a rare gas between a front faceplate and a rear faceplate, and a fluorescent material layer provided on the front faceplate, wherein the fluorescent material layer has a thickness of not more than about 7 μm .

Murata et al does not disclose the element of the fluorescent material layer provided on the front faceplate as recited in claim 1. Murata et al discloses that the phosphor layer 41 which emits visible light is formed on the inner wall of each discharge space 39, which is formed by ribs 37 on the surface of the light-emitting substrate 31, or back faceplate. See col. 7, lines 37-60 and Figures 1-2B. Murata et al clearly discloses that the light-emitting substrate 31 opposes the front substrate 11. See col. 5, lines 51-56. Thus, Murata et al does not anticipate the claimed invention for at least this reason. Claim 7 depends from claim 1 and is distinguished over Murata et al for at least the same reason.

Accordingly, Applicants respectfully request withdrawal of the rejection.

B. Morton

Claims 1 and 7 are rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Morton (US '342).

The present invention as recited in Claim 1 provides a vacuum ultraviolet radiation excited light-emitting device comprising a discharge space filled with a rare gas between a front faceplate and a rear faceplate, and a fluorescent material layer provided on the front faceplate, wherein the fluorescent material layer has a thickness of not more than about 7 μm .

Morton discloses a luminescent device with a phosphor sol gel composition layer provided on a first substrate, and the “phosphor sol gel composition layer may have a thickness which ranges from about 0.1 μm to about 20 μm ”. (see column 5, lines 42-45).

However, it is not explicitly described in Morton that the phosphor particles layer having a thickness of not more than about 7 μm is provided on the front faceplate.

In order to anticipate the claimed invention, the subject matter must be disclosed in the reference with “sufficient specificity”. See MPEP § 2131.03(II). However, when a reference teaches a broad range and the claims are directed to a narrow range and there is evidence of unexpectedly superior results, the broad range may not necessarily disclose the more narrow range with sufficient specificity to anticipate the claims. *Id.*

In this case, the element of the fluorescent material layer having a thickness of not more than about 7 μm is an important feature of the present invention, which contributes to unexpectedly superior effects of the claimed invention. As shown in the present specification, a light-emitting device of the present invention comprising a phosphor layer with a thickness of 5 μm has 180 cd/m^2 (Example 1 in the present specification) whereas a light-emitting device comprising a phosphor layer with a thickness of 10 μm has 160 cd/m^2 (Comparative Example 1). Therefore, in the case where the thickness of the phosphor layer is about 20 μm as in Morton, the

obtained light-emitting device has a luminance of less than 160 cd/m². Therefore, Morton does not reasonably disclose the claimed range of the fluorescent material layer having a thickness of not more than about 7 µm of the present invention with “sufficient specificity” to anticipate the claimed invention.

Further, Morton does not render the presently claimed invention obvious in view of the unexpectedly superior results of the claimed invention when compared to the prior art

Claim 7 depends from claim 1 and is distinguished over the art for at least the same reason.

In view of the above, Applicants respectfully request withdrawal of the rejection.

III. Response to Claim Rejection under 35 U.S.C. § 103

A. Ohsawa et al in view of Murata et al

Claims 1-2 and 5-7 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Ohsawa et al (US ‘826) in view of Murata et al (US ‘099).

Applicants respectfully traverse the rejection and submit that Ohsawa et al and Murata et al do not teach or suggest the presently claimed invention, whether taken alone or in combination.

Ohsawa et al discloses an ultraviolet excited light-emitting device (see Fig. 2). However, Ohsawa et al does not disclose a vacuum ultraviolet excited light-emitting device.

Further, Ohsawa et al discloses, “[t]here is no problem if the light output face (face panel) can be coated fully with the phosphor. However, the current face panel cannot be coated enough to use the ultraviolet ray effectively in connection with the light output needed to display”.

(column 9 lines 32-36). Thus, Ohsawa et al teaches away from the claimed invention in teaching that the face panel coated fully with the phosphor cannot be practically used.

Murata et al does not disclose the element of the fluorescent material layer provided on the front faceplate, which is an important aspect of the claimed invention as discussed above.

Thus, one of ordinary skill in the art would not have been motivated to modify or combine Ohsawa et al with Murata et al. Even if Ohsawa et al were combined with Murata, one of ordinary skill in the art would not have had a reasonable expectation of success in achieving the claimed invention. Claims 2 and 5-7 depend from claim 1 and are distinguished for at least the same reason.

Accordingly, Applicants respectfully request withdrawal of the rejection.

B. Anandan et al. (US '324) in view of Murata et al.

Claims 1-4 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Anandan et al (US '324) in view of Murata et al '099.

Applicants respectfully traverse the rejection and submit that Anandan et al and Murata et al do not teach or suggest the presently claimed invention, whether taken alone or in combination.

Anandan disclose a fluorescent lamp filled with mercury and inert gas. However, Anandan does not disclose a vacuum ultraviolet excited light-emitting device such as a PDP or the light-emitting device filled with rare gas. Furthermore, Anandan does not disclose that the phosphor layer has a thickness of not more than about 7 μm .

Murata et al fails to remedy the deficiencies of Anandan et al. Specifically, as discussed above, Murata et al does not disclose the element of the fluorescent material layer provided on the front faceplate, which is an important aspect of the claimed invention.

In view of the above Applicants submit that one of ordinary skill in the art would not have been motivated to modify or combine Anandan et al. Even if Anandan were combined with Murata et al, one of ordinary skill in the art would not have had a reasonable expectation of achieving the claimed invention since Anandan et al is silent about the phosphor layer having a thickness of not more than about 7 μm as claimed and Murata et al also fails to disclose this element of the claimed invention. Claims 2-4 depend from claim 1 and are distinguished for at least the same reason.

Accordingly, Applicants respectfully request withdrawal of the rejection.

IV. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

AMENDMENT UNDER 37 C.F.R. 1.111
U.S. APPLN. NO. 09/935,577

ATTY DKT Q65912

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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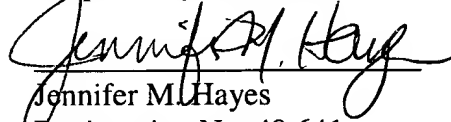
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23373

CUSTOMER NUMBER

Date: October 8, 2004

Respectfully submitted,


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AMENDMENTS TO THE DRAWINGS

Applicants submit the attached Drawing Sheet with Figures 1a and 1b as a proposed drawing in response to the Examiner's requirement for a drawing.

Attachment: Proposed Drawings (1) sheet, with Figures 1a and 1b.